

US-PAT-NO: 5737455
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TITLE: Antialiasing with grey
masking techniques
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INVENTOR-INFORMATION:

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US-CL-CURRENT: 382/284, 358/3.26 , 358/448 ,
358/461 , 358/464 , 358/534
, 382/266 , 382/268

ABSTRACT:

A method of combining antialiased edges for printing or display at a grey level reproduction device, wherein pixels have shade values determined as a function of their neighbor's shade values and mask values. Shade values are determined by processing each pixel in terms of subpixels forming the pixel. Each of a plurality of subpixels are assigned mask and shade values as a function of their position in the pixel and with respect to the nearest neighbors. The resulting values for each subpixel are averaged to determine a final output value for the pixel.

23 Claims, 9 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 5

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Brief Summary Text - BSTX (20):

In accordance with another aspect of the invention, there is provided a method of processing an image displayable or printable at a number of grey levels, and providing antialiasing for edges in such data, the method comprising: a) receiving mask values and shade values representing an image with an antialiased edge, for a pixel of interest and a plurality of neighboring pixels thereto in the image; b) subdividing the pixel of interest into a predetermined number of subpixels; c) determining from the mask data for the pixel of interest a number p of subpixels that should be permeable; d) determining a permeability value for each subpixel as a function of the mask value of the pixel of interest, the mask value of at least one neighbor and the relative position of the subpixel in the pixel of interest and the at least one neighbor; e) sorting the determined permeability values by magnitude, and identifying subpixels having the p largest magnitudes as permeable; f) determining for the pixel of interest and the plurality of neighboring pixels a

minimum shade value and a maximum shade value; g) determining from the shade data for the pixel of interest a number q of subpixels that should be background; h) determining a shade value for each subpixel as a function of the shade value of the pixel of interest, the shade value of at least one neighbor and the relative position of the subpixel in the pixel of interest and the at least one neighbor; i) sorting the determined shade values by magnitude, assigning the maximum shade value to subpixels having the q largest shade values and assigning the minimum shade value to the remaining subpixels; j) for each subpixel identified as permeable, resetting the shade value of that subpixel equal to an object shade; k) averaging the shade values of all the subpixels to obtain the antialiased value of the pixel.

Claims Text - CLTX (5):

4) combining the assigned values for each subpixel in the pixel of interest to determine a final output value for the pixel of interest, whereby the combined image has an improved edge between the foreground and background images.

Claims Text - CLTX (10):

4) combining the assigned values for each subpixel in the pixel of interest to determine a final output value for the pixel of interest, whereby the combined image has an improved edge between the

foreground and background
images.